CLAIMS

1. A locking mechanism for securing a female member to a male member, wherein the female member defines a threaded aperture and the male member has a threaded insertion end sized to threadably engage the female member threaded aperture, the locking mechanism comprising:

a body extending along an axis and having an outer side surface sized for insertion into the female member threaded aperture, the body defining first and second axial ends; and

a wedge projecting from the first axial end of the body, the wedge having an inner engagement surface adapted to engage the insertion end of the male member and an outer engagement surface adapted to engage the threaded aperture of the female member, the wedge being sufficiently pliant to deflect radially outward in response to an insertion force applied to the male member.

2. The locking mechanism of claim 1, in which the wedge forms a continuous rim extending around the body first axial end.

3. The locking mechanism of claim 1, in which a central portion of the body first axial end defines a cavity that forms the inner engagement surface of the wedge.

4. The locking mechanism of claim 3, in which the cavity has a cone shape.

5. The locking mechanism of claim 4, in which the cone has a vertex angle of approximately 120 degrees.

6. The locking mechanism of claim 1, in which the wedge deforms radially outward as the insertion force is applied to the male member.

7. The locking mechanism of claim 1, in which the locking mechanism is formed of a material having a similar hardness and strength as the male and female members.

8. The locking mechanism of claim 1, in which the locking mechanism is formed of a 300 series stainless steel.

9. A locking assembly comprising:

a first connection member defining an insertion end formed with male threads;

a second connection member defining an aperture formed with female threads complementary to the male threads; and

a locking mechanism having a body extending along an axis, the body defining a generally cylindrical outer side surface sized for insertion into the aperture of the second connection member and having first and second axial ends, a wedge projecting from the first axial end of the body, the wedge having an inner engagement surface adapted to engage the insertion end of the first connection member and an outer engagement surface adapted to engage the threaded aperture of the second connection member, the wedge being sufficiently pliant to deflect radially outward in response to an insertion force applied to the first connection member;

wherein, as the male threads of the first connection member are threadably engaged with the female threads of the second connection member by the insertion force, the inner engagement surface engages the insertion end of the first connection member to generate a first friction force between the locking mechanism and the first connection member and the wedge deflects outward so that the outer engagement surface engages the female threads of the second connection member to generate a second friction force between the locking mechanism and the second connection member.

10. The locking assembly of claim 9, in which the first connection member comprises an extension stem and the second connection member comprises a valve actuator rod.

11. The locking assembly of claim 9, in which the wedge forms a continuous rim extending around the body first axial end.

12. The locking assembly of claim 9, in which a central portion of the body first axial end defines a cavity that forms the inner engagement surface of the wedge.

13. The locking assembly of claim 12, in which the cavity has a cone shape.

14. The locking assembly of claim 13, in which the cone has a vertex angle of approximately 120 degrees.

15. The locking assembly of claim 9, in which the locking mechanism, first connection member, and second connection member are all formed of materials having similar hardness and strength.

16. The locking mechanism of claim 15, in which the locking mechanism, first connection member, and second connection member are all formed of a 300 series stainless steel.

17. A locking mechanism for securing a valve actuator rod to an extension stem, wherein the valve actuator rod defines a threaded aperture and the extension stem has a threaded insertion end sized to threadably engage the threaded aperture, the locking mechanism comprising:

a body extending along an axis and having a generally cylindrical outer side surface sized for insertion into the threaded aperture of the valve actuator rod, the body defining first and second axial ends; and

a wedge projecting from the first axial end of the body, the wedge having an inner engagement surface adapted to engage the insertion end of the extension stem and an outer engagement surface adapted to engage the threaded aperture of the valve actuator rod, the wedge being sufficiently pliant to deflect radially outward in response to an insertion force applied to the extension stem.

18. The locking mechanism of claim 17, in which the wedge forms a continuous rim extending around the body first axial end.

19. The locking mechanism of claim 17, in which a central portion of the body first axial end defines a cavity that forms the inner engagement surface of the wedge.

20. The locking mechanism of claim 19, in which the cavity has a cone shape.

21. The locking mechanism of claim 20, in which the cone has a vertex angle of approximately 120 degrees.

22. The locking mechanism of claim 17, in which the wedge deforms radially outward as the insertion force is applied to the male member.